

## REMARKS

This is intended as a full and complete response to the Office Action dated November 30, 2006, having a shortened statutory period for response extended one month to expire on March 30, 2007. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3, 4, 6-13, 15-18, 20, 21, 23-30, 32, 33, 50-52, and 54-59 remain pending in the application upon entry of this response. Claims 14, 31, and 60 have been cancelled by Applicant. Claims 1, 3, 4, 6-18, 20, 21, 23-33, 50-52 and 54-61 stand rejected. Claims 1, 11, 15, 18, 28, 32, and 50 are amended to clarify implicit aspects of the invention. Entry of these amendments and reconsideration of the claims is respectfully requested.

### ***Claim Objections***

The numbering of claims was not in accordance with 37 CFR 1.126 which requires that when new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented. In response the Applicant has renumbered claims 53-60. Withdrawal of the objection is respectfully requested.

### ***Claim Rejections – 35 U.S.C. § 103***

Claims 1, 3-4, 6-7, 17-18, 20 and 23-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Toprac* (U.S. Patent No. 6,379,980) in view of *Payne* (U.S. Patent No. 5,329,381) and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677) as evidenced by *Wilby* (U.S. Publ. No. 2003/0141572). The Applicant respectfully responds.

The combination of *Toprac*, *Payne*, *Yonezawa*, *Shoham*, *Egermeier*, and *Wilby* does not teach, show, or suggest all the claim limitations of amended claims 1 and 18. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the

radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18. In reference to cancelled claim 14, The Examiner relies on *Nakada et al.* (JP 11-251252) as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Toprac*, *Payne*, *Yonezawa*, *Shoham*, *Egermeier*, *Wilby*, and *Nakada* does not teach, show, or suggest the Applicant's etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 1, 3-4, 6-9, 11-13, 15, 17-18, 20, 23-26, 28-30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Klippert II et al* (U.S. Patent No. 6,136,712) in view of *Payne* (U.S. Patent No. 5,329,381) and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677). The Applicant respectfully responds.

The combination of *Klippert II*, *Payne*, *Yonezawa*, *Shoham*, and *Egermeier* does not teach, show, or suggest all the claim limitations of amended claims 1 and 18. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18. In reference to cancelled claim 14, The Examiner relies on *Nakada et al.* (JP 11-251252) as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Klippert II*, *Payne*, *Yonezawa*, *Shoham*, *Egermeier*, *Wilby*, and *Nakada* does not teach, show, or suggest the Applicant's etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is

modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 1, 3-4, 6-9, 11-13, 15, 17-18, 20, 23-26, 28-30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Petrucci et al* (WO 01/24254) in view of *Payne* (U.S. Patent No. 5,329,381) and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677). The Applicant respectfully responds.

The combination of *Petrucci*, *Payne*, *Yonezawa*, *Shoham*, and *Egermeier* does not teach, show, or suggest all the claim limitations of amended claims 1 and 18. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18. In reference to cancelled claim 14, The Examiner relies on *Nakada et al.* (JP 11-251252) as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Petrucci*, *Payne*, *Yonezawa*, *Shoham*, *Egermeier*, *Wilby*, and *Nakada* does not teach, show, or suggest the Applicant's etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 1, 3-4, 6-9, 11-13, 15, 17-18, 20, 23-26, 28-30 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Grimbergen et al* (U.S. Patent No. 6,390,019) in view of *Payne* and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677). The Applicant respectfully responds.

The combination of *Grimbergen, Payne, Yonezawa, Shoham, and Egermeier* does not teach, show, or suggest all the claim limitations of amended claims 1 and 18. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18. In reference to cancelled claim 14, The Examiner relies on *Nakada et al.* (JP 11-251252) as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Grimbergen, Payne, Yonezawa, Shoham, Egermeier, Wilby, and Nakada* does not teach, show, or suggest the Applicant's etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 10, 20, and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Toprac* (U.S. Patent No. 6,379,980) in view of *Payne* (U.S. Patent No. 5,329,381) and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677), and Yu (U.S. Patent No. 6,368,982). The Applicant respectfully responds.

Claim 10 depends from claim 1, and claims 20 and 27 depend from claim 18, both of which are patentable as discussed above. Yu is relied upon as disclosing a method of mask trim, and does not cure the defects of the combination of *Toprac, Payne, Yonezawa, Shoham, and Egermeier*. Withdrawal of the rejection is respectfully requested.

Claims 14 and 31, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Klippert II et al* (U.S. Patent No. 6,136,712) in view of *Payne* (U.S. Patent No. 5,329,381) and *Yonezawa et al* (U.S. Publ. No. 2003/0222231) or *Shoham*

*et al* (U.S. Publ. No. 2004/0028267) or *Egermeier et al* (U.S. Publ. No. 2002/0006677) and further in view of *Nakada et al* (JP 11-251252). The Applicant respectfully responds.

The Applicant has cancelled claims 14 and 31 and has included the subject matter into claims 1 and 18 respectively. The Examiner relies on *Nakada* as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Klippert II*, *Payne*, *Yonezawa*, or *Shoham*, *Egermeier*, and *Nakada* does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claims 1 and 18. Withdrawal of the rejection is respectfully requested.

Claims 50-52 and 54-59 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Grimbergen et al* (U.S. Patent No. 6,390,019) in view of *Payne* (U.S. Patent No. 5,329,81) and further in view of *Cha et al* (U.S. Patent No. 6,319,767) and *Yu* (U.S. Patent No. 6,368,982). The Applicant respectfully responds.

The combination of *Grimbergen*, *Payne*, *Cha*, and *Yu* does not teach, show, or suggest all the claim limitations of amended claim 50. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation having an intensity modulated at a frequency of about 10 Hz onto the substrate, as recited by claim 50, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claim 60 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Grimbergen et al* (U.S. Patent No. 6,390,019) in view of *Payne* (U.S. Patent No. 5,329,381) and *Cha et al* (U.S. Patent No. 6,319,767) and *Yu* (U.S. Patent No. 6,368,982) as applied to claims 50-52 and 54-60 and further in view of *Nakada et al* (JP 11-251252). The Applicant respectfully responds.

The Applicant has cancelled claim 60 and has included the subject matter into claim 50. The Examiner relies on *Nakada* as disclosing that light having a desired wavelength and modulation of intensity is used for monitoring a plasma. However, *Nakada* discloses frequencies in the several hundreds of kHz, frequencies a lot higher than the Applicant's recitation of 10 Hz in claims 1 and 18. Thus, the combination of *Grimbergen*, *Payne*, *Cha*, *Yu*, and *Nakada* does not teach, show, or suggest an etch monitoring process comprising directing radiation onto the substrate, wherein an intensity of the radiation is modulated at a frequency of about 10 Hz, and collecting a portion of the radiation reflected from the substrate, as recited by claim 50. Withdrawal of the rejection is respectfully requested.

Claims 50-52 and 54-59 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over *Toprac* (U.S. Patent No. 6,379,980) or *Klippert II et al* (U.S. Patent NO. 6,136,712) or *Petrucci et al* (WO 01/24254) in view of *Payne* (U.S. Patent No. 5,329,381) and further in view of *Cha et al* (U.S. Patent No. 6,319,767) and or *Klippert II et al* (U.S. Patent NO. 6,136,712) or *Petrucci et al* (WO 01/24254) in view of *Payne* (U.S. Patent No. 5,329,381) and further in view of *Cha et al* (U.S. Patent No. 6,319,767) and *Yu* (U.S. Patent No. 6,368,982). Applicant respectfully responds.

The combination of *Toprac*, *Klippert Petrucci*, *Payne*, *Cha*, and *Yu* does not teach, show, or suggest all the claim limitations of amended claim 50. For example, the combination does not teach, show, or suggest an etch monitoring process comprising directing radiation having an intensity modulated at a frequency of about 10 Hz onto the substrate, as recited by claim 50, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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